

## EAST Search History

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	71	(comfort adj noise) and (signal adj attenuat\$3)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/01/17 08:52
L2	32	(comfort adj noise) and (signal adj attenuat\$3) and IP	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/01/17 09:02
L3	18	((voice and over and IP) or voip).ti. and ((comfort adj noise) or SID) and (noise)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/01/17 09:11
L4	35	((background or comfort) adj (noise)) same priority same output	US-PGPUB; USPAT; USOCR	OR	ON	2007/01/17 09:11
L5	15	((background or comfort) adj noise).ti. and SID and (speaker)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/01/17 09:17
L7	32	(push adj to adj talk) and (@rlad<"20011231" or @ad<"20011231")	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/01/17 09:19
L8	29	(speakerphone and (SID or (silence adj indicator) )) and (@rlad<"20011231" or @ad<"20011231")	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/01/17 09:26
L9	6	(push adj to adj talk) and speaker\$8 and (@rlad<"20011231" or @ad<"20011231")	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/01/17 09:38
L10	87	(half adj duplex) same (attenuat\$3) same transmit\$4	US-PGPUB; USPAT; USOCR	OR	ON	2007/01/17 09:55

## EAST Search History

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L11	95	(echo and signal and mask\$4).clm.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/01/17 10:04
L13	1	(echo and signal and mask\$4 and priorit\$7).clm.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/01/17 10:01
L14	66	(status and signal and speaker and phone).clm.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/01/17 10:05
L17	7	(echo and signal and mask\$4 and attenuat\$7).clm.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/01/17 10:04



notice echo attenuation OR attenuation "comf

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**All Results**[E Romesburg](#)[Ericsson Inc.](#)[D Abebe](#)[J Rasmusson](#)[F Isen](#)**Compressed domain noise reduction and echo suppression for network speech enhancement**

R Chandran, DJ Marchok, TR Center, IN Mishawaka - Circuits and Systems, 2000.

Proceedings of the 43rd IEEE ..., 2000 - [ieeexplore.ieee.org](#)

Page 1. Compressed Domain Noise Reduction and Echo Suppression ... After perForming echo caudation and noise dudion, the speed^ is re- ...

Cited by 4 - [Related Articles](#) - [Web Search](#) - [BL Direct](#)**Method and apparatus for cancelling echo originating from a mobile terminal - group of 3 »**

T Trump - US Patent 6,256,384, 2001 - Google Patents

... (\*) **Notice:** Subject to any disclaimer, the term of this patent is ... **Comfort noise** generator ... FIR filter 26 is optional, because the **echo attenuation** by linear ...Cited by 4 - [Related Articles](#) - [Web Search](#)**Methods and apparatus for improved echo suppression in communications systems - group of 3 »**

ED Romesburg, JAJ Rasmusson - US Patent 6,160,886, 2000 - Google Patents

... 130 to determine the additional **attenuation** needed to ... has been disconnected when the **echo** suppressor 130 ... user, today's systems often add **comfort noise** to the ...Cited by 22 - [Related Articles](#) - [Web Search](#)**Methods and apparatus for providing comfort noise in communications systems - group of 3 »**

ED Romesburg, LS Bloebaum, CNS Guruparan - US Patent 6,163,608, 2000 - Google Patents

... the noise attenuated by the non-linear **echo** suppres-sor ... 2A can be substituted for the y **attenuation** block 280 ... audio signal 135 and the **comfort noise** samples 265 ...Cited by 14 - [Related Articles](#) - [Web Search](#)**Methods and apparatus for providing echo suppression using frequency domain nonlinear processing - group of 3 »**

P Srqvist, A Eriksson - US Patent 6,658,107, 2003 - Google Patents

... **Notice:** Subject to any disclaimer, the term of this ... the **echo** suppressed and **comfort noise** enhanced output ... and furthermore, the level of **echo attenuation** may not ...Cited by 2 - [Related Articles](#) - [Web Search](#)**Methods and apparatus for controlling echo suppression in communications systems - group of 3 »**

ED Romesburg - US Patent 6,148,078, 2000 - Google Patents

... The **echo** suppressor 130 then provides additional **echo attenuation** as necessary, and **comfort noise** is optionally added via the summing device 150 to compen- 60 ...Cited by 8 - [Related Articles](#) - [Web Search](#)**Mobile crosstalk control—Enhancing speech quality in digital cellular networks - group of 2 »**A Eriksson, M Eriksson, T Trump, TV Hulth - Ericsson Review, 1998 - [ericsson.com](#)... condi- tions users can still **notice echo** that origi ... When the algorithm activates

**attenuation, the comfort noise ... level settings—the level of echo depends on ...**  
[Cited by 1](#) - [Related Articles](#) - [View as HTML](#) - [Web Search](#)

**Desired voice detection in echo suppression - group of 3 »**

ED Romesburg - US Patent 6,507,653, 2003 - Google Patents

... (\*) **Notice:** Subject to any disclaimer, the term of this patent is ... circuit operates the NLP in an **echo-voice** mode having substantial signal **attenuation**. ...

[Cited by 6](#) - [Related Articles](#) - [Web Search](#)

**Sig - group of 3 »**

AFDAE Cancellor, P Eneroth, T Gansler - tde.lth.se

... major speech detection errors, resulting in **attenuation** of actual ... This residual **echo** can then be removed by ... decorrelator, studied in Chapter 4. **Notice** that the ...

[Related Articles](#) - [View as HTML](#) - [Web Search](#)

**Controlling attenuation during echo suppression - group of 2 »**

DL Barron, WC Yip, SS You - US Patent 7,065,207, 2006 - Google Patents

... **Notice:** Subject to any disclaimer, the term of this patent is ... signal; and wherein a is the **attenuation** factor ... The **echo** cancellation system of claim 18 wherein the ...

[Related Articles](#) - [Web Search](#)

**Double talk, NLP and comfort noise - group of 2 »**

Y Zhang, B Kosanovic - US Patent 7,050,576, 2006 - Google Patents

... (\*) **Notice:** Subject to any disclaimer, the term of this ... The present invention teaches the **attenuation** of state ... is faded instead of clipped and **echo** leak is ...

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**Integrated noise cancellation and residual echo suppression - group of 4 »**

DA Cairns - US Patent 7,027,591, 2006 - Google Patents

... **Notice:** Subject to any disclaimer, the term of this patent is ... then adds **comfort noise** to residual **echo** suppressed signal ... 58 may depend on the **attenuation** of RES ...

[Related Articles](#) - [Web Search](#)

**Exponential echo and noise reduction in silence intervals**

HJ Matt, M Walker, M Maurer - US Patent 6,999,920, 2006 - Google Patents

... (\*) **Notice:** Subject to any disclaimer, the term of this ... constant noise level, a noise **attenuation** is also ... at the instants when additional **echo** reduction takes ...

[Web Search](#)

**Noise-level adaptive residual echo suppressor - group of 3 »**

W Dehandschutter - US Patent 6,959,167, 2005 - Google Patents

... (\*) **Notice:** Subject to any disclaimer, the term of ... operation of a **Comfort Noise** Generator (CNG) at the ... and the achieved residual **echo attenuation** is larger ...

[Related Articles](#) - [Web Search](#)

**Echo cancellation in digital data transmission system - group of 3 »**

O Kirla - US Patent 6,816,592, 2004 - Google Patents

... (\*) **Notice:** Subject to any disclaimer, the term of this patent is extended or ... **echo** estimate  $y'(n-T_s)$  and thus the **attenuation** achieved for the **echo** signal  $y$  ...

[Related Articles](#) - [Web Search](#)

**Echo and soft VoIP PBX systems**

D Mandelstam - Linux Journal, 2005 - portal.acm.org

... The use of **attenuation** to eliminate **echo** was not ... The first thing to **notice** is the **echo** does ... In higher-performance **echo** cancellers, the nonlinear processor then ...

[Web Search](#)

Perceptual Acoustic **Echo** Suppressor for Audio Communication over Packet Networks

M Technologies - doi.ieeecomputersociety.org

... compromise was with a maximum of -3dB dynamic **attenuation**. ... We **notice** that in somehighly non-linear **echo** ... in double talk situation to remove the near-end **echo**. ...[Related Articles](#) - [Web Search](#)Full-duplex hands-free transparency circuit and method therefor - group of 3 »

JB Picket, CW Springfield, WC Yip - US Patent 6,799,062, 2004 - Google Patents

... tional loss needed to mask any remaining residual **echo**. Additional loss is applied in **attenuation** stages provided ... range, a listener does not **notice**, or object ...[Related Articles](#) - [Web Search](#)System and method for **comfort noise** generation - group of 2 »

W Tian, Y Lu - US Patent 6,766,020, 2004 - Google Patents

... ( \* ) **Notice**: Subject to any disclaimer, the term of this ... the **echo** estimate and subtract the **echo** estimate from ... In other words, no **attenuation** or synthesizing is ...[Related Articles](#) - [Web Search](#)RANDOM STOP COUNT - group of 2 »

US Patent 7,103,014 - Google Patents

... ( \* ) **Notice**: Subject to any disclaimer, the term of this patent ... Generally, increasing the **attenuation** of switch 201 improves the **echo** suppression but worsens ...[Web Search](#)Method and apparatus for **echo** estimation and suppression - group of 3 »

A Eriksson - US Patent 6,466,666, 2002 - Google Patents

... ( \* ) **Notice**: Subject to any disclaimer, the term of this ... is represented by the **echo** path **attenuation** ERL (ERL ... station and is passed through **echo** suppressor 40 ...[Cited by 3](#) - [Related Articles](#) - [Web Search](#)Method and apparatus for network speech enhancement - group of 3 »

W Etter, CS Chuang - US Patent 6,760,435, 2004 - Google Patents

... ( \* ) **Notice**: Subject to any disclaimer, the term of this ... signal is then supplied to **echo** controller 22 which includes a center **attenuation** calculator 82 ...[Related Articles](#) - [Web Search](#)Acoustic **echo** canceller - group of 6 »

WS Lee - US Patent 7,031,269, 2006 - Google Patents

... ( \* ) **Notice**: Subject to any disclaimer, the term of this patent is ... signal to specify the replacement of the **echo** residual signal by **comfort noise**. ...[Cited by 6](#) - [Related Articles](#) - [Web Search](#)**Echo** suppression using adaptive gain based on residual **echo** energy - group of 4 »

ED Romesburg, MR Arana-Manzano - US Patent 6,622,030, 2003 - Google Patents

... ( \* ) **Notice**: Subject to any disclaimer, the term of this patent is ... 204, control logic 206, a residual **echo** suppressor 208, and a **comfort noise** unit 210. ...[Cited by 2](#) - [Related Articles](#) - [Web Search](#)**Echo** canceller in a communication system at a terminal

P Scalart, G Le Tourneur, F Bouteille, C Beaugéant - US Patent 7,023,986, 2006 - Google Patents

... ( \* ) **Notice**: Subject to any disclaimer, the term of this ... signal, from the estimated **echo** signal, from ... According to the invention, this **attenuation** is partly ...

Related Articles - Web SearchFull duplex **echo** cancelling circuit - group of 2 »

SM Domer, SL Thomasson - US Patent 6,904,146, 2005 - Google Patents

... Technology, Inc., Mesa, AZ (US) ( \* ) **Notice:** Subject to any ... control circuit includ-  
-ing **attenuation** controller 25 ... The **echo** canceller has three operating states. ...Related Articles - Web SearchProtecting an **echo** canceller against random transitions in **echo** paths - group of 3 »

M Tahernezhaadi - US Patent 6,836,547, 2004 - Google Patents

... ( \* ) **Notice:** Subject to any disclaimer, the term of this patent is extended or ... The  
ERLE represents the amount of **attenuation** added to the 35 **echo** as a result ...Cited by 1 - Related Articles - Web Searchdoc) 1. Management Summary

T Source - etsi.org

... **NOTICE**, The author of this document declares ... convergence characteristics, spectral  
**echo attenuation**, NLP implementation; ... or the design of **comfort noise** injection. ...Related Articles - View as HTML - Web Search4 thETSI Speech Quality Test Event (2005-08) - group of 2 »

QA STQ - etsi.org

... Important **notice** ... **comfort noise** generation at the receiving side ... parameter like the  
codec performance under 5% packet loss, the **echo attenuation** under single ...Related Articles - View as HTML - Web SearchAnonymized Test Report - group of 2 »

E Plugtests, H acoustics GmbH - etsi.org

... **Notice:** • The author of this document declares that ... well as VAD- and **comfort noise**  
implementa- tions. ... talk and specifically the **echo** canceller characteristics ...Related Articles - View as HTML - Web SearchDigital adaptive filter and acoustic **echo** canceller using the same - group of 3 »

W Armbrüster - US Patent 6,842,516, 2005 - Google Patents

... (54) DIGITALADAPTIVE FILTER AND ACOUSTIC **ECHO** CANCELLER USING ... ( \* )**Notice:** Subject

to any disclaimer, the term of this patent is extended or adjusted under 35 ...

Related Articles - Web SearchITU-Tp. 340

T INSTALLATIONS, L LINE - kaynam.com

... As of the date of approval of this Recommendation, ITU had not received **notice** of  
intellectual ... AEC Acoustic **echo** canceller ... a H Insertion **attenuation** range (dB) ...View as HTML - Web SearchMethod and processor in a telecommunication system - group of 3 »

E Walles - US Patent 6,940,829, 2005 - Google Patents

... Assignee: **Notice:** Appi. No. ... **Comfort noise** is added as produced in **comfort noise**  
generator 106. ... canceller is the part that secures a good **echo attenuation** ...Related Articles - Web SearchNoise reduction circuit for telephones - group of 2 »

SL Thomasson - US Patent 6,798,881, 2004 - Google Patents

... ( \* ) **Notice:** This patent issued on a continued prosecution ... as yet, no signal from

**echo** canceling circuit ... 174, which is initially set to minimum **attenuation**. ...  
[Cited by 1](#) - [Related Articles](#) - [Web Search](#)

**A White Paper on Sage's PVIT - group of 4 »**

R Dai - sageinst.com

... or the call is disconnected (dropped) or the **attenuation** is too ... can be measured through Sage's **Echo** Sounder test ... **Notice** that the relation shown here is only ...

[Related Articles](#) - [View as HTML](#) - [Web Search](#)

[BOOK] **Stereophonic acoustic echo cancellation: theory and implementation**

P Eneroth - es.lth.se

... **echo** signal. This delay in combination with low **echo attenuation** reduces the perceptual quality of the system. Fortunately, the ...

[Cited by 3](#) - [Related Articles](#) - [Web Search](#)

**Echo cancellation device for cancelling echos in a transceiver unit - group of 3 »**

U Lindgren, M Misra, J Philipsson - US Patent 6,597,787, 2003 - Google Patents

... **ECHO CANCELLATION DEVICE FOR CANCELLING ECHOS IN A TRANSCEIVER UNIT**

Inventors: Assignee:

**Notice:** 6,163,609 A \* 12/2000 6,185,300 BI \* 2/2001 Makinen et al. ...

[Cited by 8](#) - [Related Articles](#) - [Web Search](#)

**Enhancement of near-end voice signals in an echo suppression system - group of 2 »**

N Christensson, J Philipsson - US Patent 6,510,224, 2003 - Google Patents

... **Notice:** Subject to any disclaimer, the term of this ... may also be employed to control an **attenuation** factor of an active acoustic **echo** canceler based on ...

[Cited by 2](#) - [Related Articles](#) - [Web Search](#)

**A White Paper on SMOS - group of 4 »**

R Dai - Sage Instruments white papers, November, 2001 - sageinst.com

... band modem (such as fax) and network **echo** cancellers ... to 3400 Hz) signal level change

(**attenuation** or gain ... **Notice** that the gain is measured and integrated across ...

[Related Articles](#) - [View as HTML](#) - [Web Search](#)

[BOOK] **French Dictionary of Information Technology: French/English, English/French - group of 2 »**

TR Pyper - 1989 - books.google.com

... de la bande latérale sideband attenua -tion; ~ de la bande passante band-pass **attenuation**; band-pass loss; ~ de l'écho **echo attenuation**; active return loss ...

[Web Search](#) - [Library Search](#)

**Speech Processing, Transmission and Quality Aspects (STQ); Specification and measurement of speech ... - group of 2 »**

E Guide - webapp.etsi.org

... 88 Important **notice** Individual copies of the present document can be downloaded from: <http://www.etsi.org> ... 22 6.2.3.2 **Echo** control ...

[Related Articles](#) - [Web Search](#)

**Telephone having four VAD circuits - group of 3 »**

SM Domer, KM Vanda - US Patent 6,754,337, 2004 - Google Patents

... (\*) **Notice:** Subject to an patent is extf USC 154(b ... is, as yet, no signal from **echo** cancelling circuit ... are initially set to minimum **attenuation**, as illustrated ...

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An Evaluation of Selected Communications Assemblies and Hearing Protection Systems: A Field Study ... - group of 4 »

A Scharine, P Henry, M Binseel - 2004 - stinet.dtic.mil

... **DESTRUCTION NOTICE** Destroy this report when it is no ... Oscar X-ray Four Echo Papa Yankee ... Ranking **Comfort Noise Attenuation** Speech Intelligibility Overall Rank ...

Cited by 1 - [Related Articles](#) - [View as HTML](#) - [Web Search](#)

[book] VoIP Service Quality: Measuring and Evaluating Packet-switched Voice

WC Hardy - 2003 - books.google.com

... 28 **Echo** 29 ... **Notice**, then, that if we fail to distinguish between the variety of commonly understood meanings of the term QoS, we might assert, without fear ...

Cited by 9 - [Related Articles](#) - [Web Search](#)

Analog voice activity detector for telephone - group of 3 »

JL Allen, SM Domer - US Patent 6,847,930, 2005 - Google Patents

... ( \* ) **Notice**: Subject to any disclaimer, the term of this ... are initially set to minimum **attenuation**, as illustrated ... cancelling is applied when there is no **echo**. ...

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Noise suppression - group of 3 »

VV Mattila, E Paajanen, A Vhtalo - US Patent 6,810,273, 2004 - Google Patents

... ( \* ) **Notice**: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 USC 154(b) by 476 days. (21) Appi. ...

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Universal telephony tones detector - group of 3 »

J Ahmad - US Patent 6,868,116, 2005 - Google Patents

... ( \* ) **Notice**: Subject to any disclaimer, the term of this patent is ... from R out to S, is the **echo** return loss (ERL). The **attenuation** due to cancellation from ...

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Method and communication device for optimizing **echo** cancellation - group of 3 »

W Song - US Patent 6,678,254, 2004 - Google Patents

... ( \* ) **Notice**: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 USC 154(b) by 0 ... The **attenuation** of the **echo** (in decibels ...

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Continuity of voice carried over DSL during power failure - group of 2 »

AD Wallace, C Tate, M Bridger - US Patent 6,647,117, 2003 - Google Patents

... ( \* ) **Notice**: Subject to any disclaimer, the term of this ... effects of dispersion, noise and **attenuation** along the ... **echo** cancellation of the local **echo** introduced by ...

Cited by 4 - [Related Articles](#) - [Web Search](#)

[book] Noise Reduction in Speech Applications - group of 4 »

GM Davis - 2002 - books.google.com

... The fee is subject to change without **notice**. ... cepstral mean normalization CNG **comfort noise** generator COTS ... elementary perceived qualities ERL **echo** return loss ...

Cited by 10 - [Related Articles](#) - [Web Search](#) - [Library Search](#)

Discrete Systems and Signal Spaces

PCM PCM - doi.wiley.com

... b) A sinusoidal pulse, amplification by factor  $A = 2$ , and **attenuation** by factor ...

$y(n) = x(n - k)$ , then  $H(Gx) \neq G(Hx)$  for all  $x$  unless  $k = 0$ . **Notice** also that ...

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Detection of the speech activity of a source - group of 2 »

P Valve, J Hkkinen - US Patent 6,707,910, 2004 - Google Patents

... (\*) **Notice:** Subject to any disclaimer, the term of this ... detection at the source of mere **echo** (no near-end ... If the direction **attenuation** operates sufficiently well ...[Related Articles](#) - [Web Search](#)ARIB STD-T64 C S0052-0 v1. 0 Source-Controlled Variable-Rate Multimode Wideband Speech Codec (VMR-WB ...

SC Variable-Rate - arib.or.jp

... Refer to "**Notice**" in the preface of ARIB STD-T64 for ... 3GPP TS 26.192, AMR Wideband Speech Codec; **Comfort Noise** Aspects, March ... 24 36 3.1.1.3.3 **Echo** Return Loss ...[Related Articles](#) - [View as HTML](#) - [Web Search](#)I High Performance Modems for Plain Old Telephone Service (POTS) I Remote Access Server (RAS) Modems ... - group of 6 »

IGSMHU SoftFone, B Processor, IAC Basestations - analog.com

... modems make use of digital techniques to perform such functions as modulation, demodulation, error detection and correction, equalization, and **echo** cancellation ...[Related Articles](#) - [View as HTML](#) - [Web Search](#)Integrated adjustable short-haul/long-haul time domain reflectometry - group of 3 »

N Kaburlasos, J Little, V Nikhade - US Patent 6,862,546, 2005 - Google Patents

... (\*) **Notice:** Subject to any disclaimer, the term ... switching, voice compression, **echo** canceling, **comfort** ... functionality 424, jitter **attenuation** functionality 426 ...[Related Articles](#) - [Web Search](#)Method and apparatus for non-linear processing of an audio signal - group of 3 »

PP He, RA Smith, LFC Pessoa, RA Dyba - US Patent 7,016,488, 2006 - Google Patents

... (\*) **Notice:** Subject to any disclaimer, the term of this patent is extended or ... USE ADAPTIVE FILTER TO GENERATE AN **ECHO** ESTIMATION SIGNAL ... GENERATE **COMFORT NOISE** ...[Related Articles](#) - [Web Search](#)Method and apparatus for performing adaptive filtering - group of 2 »

LFC Pessoa, RA Dyba, PP He - US Patent 6,961,423, 2005 - Google Patents

... (\*) **Notice:** Subject to any disclaimer, the term of this patent is extended or ... USE ADAPTIVE FILTER TO GENERATE AN **ECHO** ESTIMATION SIGNAL ... GENERATE **COMFORT NOISE** ...[Related Articles](#) - [Web Search](#)Dynamic balance control for telephone - group of 2 »

JR Mikesell, FH Story - US Patent 6,990,194, 2006 - Google Patents

... (\*) **Notice:** Subject to any disclaimer, the term of this patent is extended or ... A wide band or system VAD monitors **echo** canceling circuitry to detect voice ...[Related Articles](#) - [Web Search](#)Building Residential VoIP Gateways: A Tutorial

T Chan, D Greenstreet, G Yancey - Texas Instruments, VoIP Business Unit - focus.ti.com

... received voice and/or **comfort noise** samples until ... Mitigation requires robust **echo** cancellation solutions ... Background noise • Signal **attenuation**/gain changes ...[Cited by 2](#) - [Related Articles](#) - [View as HTML](#) - [Web Search](#)Digital Cellular Phone: A Functional Analysis - group of 10 »

A Report - [www-s.ti.com](http://www-s.ti.com)

... SPRA134 October 1994 Printed on Recycled Paper Page 2. **IMPORTANT NOTICE**

Texas Instruments (TI) reserves the right to make changes ...

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[BOOK] [Fundamentals of Voice Quality Engineering in Wireless Networks](#) - group of 4 »

A Perry - 2006 - [books.google.com](http://books.google.com)

... GL-Communications, GL-Comm echo canceller testing solutions, [www.gl.com](http://www.gl.com) ...

Telecommunications System (Phase 2+); Full Rate Speech; **Comfort Noise** Aspectfor ...

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[Applications With the](#) - group of 7 »

T DSPs - [saturn.uni-mb.si](http://saturn.uni-mb.si)

... to its products or to discontinue any semiconductor product or service without **notice**, and advises ... Digital Voice **Echo** Canceler Implementation on the TMS320C5x ...

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[Voice gateway with downstream voice synchronization](#) - group of 3 »

TF Rabenko, D Hartman, JCH Thi - US Patent 7,023,868, 2006 - Google Patents

... (\*) **Notice**: Subject to any disclaimer, the term ofthis patent is extended or adjusted under 35 USC 154(b) by 1 110 days. (21) Appl. No.: 09/737,175 ...

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S Parent, S Changes, G Info - [gauss.ffii.org](http://gauss.ffii.org)

EP1347660 Xircom wireless inc (US): Pcs pocket phone/microcell communication over-air protocol Pcs-taschentelefon/mikrozellen funkübertragungsprotokoll Protocole ...

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notice echo attenuation OR attenuat

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S6	2 AND NOTICE	1855	<a href="#">Display</a>
S7	S2 AND NOTICE	0	<a href="#">Display</a>
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8/9/1 (Item 1 from file: 2)

08087931 INSPEC Abstract Number: A2001-24-4350-007, C2001-12-3395-004

**Title:** Testing of ANR (active noise reduction) headsets**Author** Behar, A.**Author Affiliation:** IBBME, Toronto Univ., Ont., Canada**Journal:** Canadian Acoustics **Conference Title:** Can. Acoust. (Canada) vol.29, no.3 p. 52-5**Publisher:** Canadian Acoust. Assoc ,**Publication Date:** Sept. 2001 **Country of Publication:** Canada**CODEN:** CAACDX **ISSN:** 0711-6659**SICI:** 0711-6659(200109)29:3L:52:TANR;1-4**Material Identity Number:** B883-2001-004**Conference Title:** Acoustics Week in Canada**Conference Date:** 2001 **Conference Location:** Alliston, Ont., Canada**Language:** English **Document Type:** Conference Paper (PA); Journal Paper (JP)**Treatment:** Practical (P)

**Abstract:** ANR is a technique by which a signal of equal characteristics but with opposite phase is injected to neutralize the original one. Although patented in the early 30th, it was only in 1957 that it was adapted to earmuffs. And it was only in the last 20 or so years that the technique started to be applied outside of the research labs for practical applications. The main advantage of the use of ANR headsets is the increase of the attenuation at frequencies below 1 KHz. There is no significant reduction of the risk of hearing losses at these frequencies. However, due to the forward masking phenomenon, a reduction of the sound level at low frequencies results in an improvement in intelligibility and the consequent ease in oral communications. Therefore, the two main applications of those headsets is in communications and in comfort. A typical ANR includes a microphones, processor and speakers under each of the cups. A communication headset also includes means to inject the audio signal and a noise excluding microphone. The "comfort" headset, found mainly in executive classes of airlines does not include these means. There are two main characteristics that can be measured in an ANR headset. They are the attenuation of different frequencies and the intelligibility as perceived by the wearer under different circumstances (types of noise and sound levels). Although testing of those characteristics is something manufacturers as well as authorities are interested in, there are still no test methods standardized or even recognized. Right now, in Canada, researches are underway (at the DCIEM and the NRC among others) trying to design a testing protocol that could be universally accepted. The Sensory Communications group at the University of Toronto is presently studying a method that uses an Acoustical Test Fixture (ATF or Artificial Head) and allows for the measurement of Insertion Loss (IL). The attenuation could be, eventually calculated using the IL values. At the present, we are interested in the repeatability from consecutive measurements on the same protector, between protectors of the same type, as well as comparison between protectors of different types and from different manufacturers. ( 0 Refs)

**Subfile:** A C**Descriptors:** active noise control; ear protection**Identifiers:** active noise reduction headsets; ANR headsets; earmuffs; hearing losses; forward masking phenomenon; intelligibility; oral communications; communication headset; attenuation; testing protocol; Insertion Loss**Class Codes:** A4350 (Acoustic noise, its effects and control); A8734 (Audition); A4360 (Acoustic signal processing); C3395 (Other applications of control); C3120Z (Other nonelectric variables control)

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8/9/2 (Item 2 from file: 2)

06800303 INSPEC Abstract Number: B9802-6210D-012

**Title:** An improved echo shaping algorithm for acoustic echo control

**Author** Martin, R.; Gustafsson, S.

**Author Affiliation:** IND, Tech. Hochschule Aachen, Germany

**Conference Title:** Signal Processing VIII, Theories and Applications. Proceedings of EUSIPCO-96, Eighth European Signal Processing Conference **Part** vol.1 p. 25-8 vol.1

**Editor(s):** Ramponi, G.; Sicuranza, G.L.; Carrato, S.; Marsi, S.

**Publisher:** Edizioni LINT Trieste, Trieste, Italy

**Publication Date:** 1996 **Country of Publication:** Italy 3 vol. lxiii+2144 pp.

**ISBN:** 88 86179 83 9 **Material Identity Number:** XX96-02176

**Conference Title:** Proceedings EUSIPCO-96, VII European Signal Processing Conference

**Conference Date:** 10-13 Sept. 1996 **Conference Location:** Trieste, Italy

**Availability:** Giovanni L Sicuranza, DEEI, University of Trieste, 34100 Trieste, Italy

**Language:** English **Document Type:** Conference Paper (PA)

**Treatment:** Practical (P); Theoretical (T)

**Abstract:** This paper describes and analyses an improved algorithm for hands-free telephony which uses an acoustic echo canceller combined with an additional FIR-filter (called the "echo shaping filter") in the sending path of hands-free telephones. The algorithm controlling the filter is based on an approximation of an optimal least squares filter. Simulation results show that the algorithm allows a significant reduction in the order of the echo canceller, while still providing high echo attenuation and low distortion of the near end speech signal during double talk. The modulation of the background noise caused by the echo shaping filter can be reduced by adding artificially generated noise to the output signal "comfort noise". ( 8 Refs)

**Subfile:** B

**Descriptors:** circuit optimisation; echo suppression; FIR filters; least squares approximations; telephony; voice communication

**Identifiers:** echo shaping algorithm; acoustic echo control; hands-free telephony; FIR-filter; echo shaping filter; optimal least squares filter; echo attenuation; speech signal; background noise; comfort noise

**Class Codes:** B6210D (Telephony); B1270F (Digital filters); B6140 (Signal processing and detection)  
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8/9/3 (Item 3 from file: 2)

05722125 INSPEC Abstract Number: A9418-4350-003

**Title:** Narrow-band digital active noise reduction in a siren-cancelling headset: real-ear and acoustical manikin insertion loss

**Author** Casali, J.G.; Robinson, G.S.

**Author Affiliation:** Dept. of Ind. & Syst. Eng., Virginia Polytech. Inst. & State Univ., Blacksburg,

VA, USA

**Journal:** Noise Control Engineering Journal vol.42, no.3 p. 101-16**Publication Date:** May-June 1994 **Country of Publication:** USA**CODEN:** NCEJD5 **ISSN:** 0736-2501**Language:** English **Document Type:** Journal Paper (JP)**Treatment:** Practical (P); Experimental (X)

**Abstract:** Active noise cancellation (ANC) technology has become available for hearing protectors and communications headsets in efforts to augment their low-frequency passive attenuation performance. Several analog-electronics ANC earmuffs offer active attenuation of up to about 20 dB at frequencies less than 1000 Hz and rely on the muff's passive attenuation at higher frequencies. Such performance lends itself primarily to application in wideband, low-frequency biased noises. However, operators in more narrow-band noise threats may also benefit from a new approach to ANC-based hearing protection devices, i.e., that of the digital, supra-aural headphone. The design, testing, and application of digital ANC-based protectors (as contrasted with analog) are reviewed, and results of an attenuation experiment on a siren-cancelling headphone are presented. The insertion loss measurement scenario utilized one-third-octave, 30-s-average sound pressure levels measured by miniature microphones in real ears and on a KEMAR manikin. Temporally variant siren modes consisting of "wail," "yelp," and "hi-lo," were reproduced at representative wideband 30-s-average sound pressure levels of 90, 95, and 100 dB. There was generally close agreement between the real-ear and KEMAR insertion-loss data at midband frequencies from 500 to 6300 Hz. At the peak siren frequency of 800 Hz, mean real-ear attenuation ranged from 8 to 22 dB. At 4000 Hz and some higher frequencies, attenuations of 15 dB were found, but at the 100 dB levels for the Wail and Yelp signals, significant reductions in attenuation (from those measured at the lower siren levels) occurred as a consequence of a pre-programmed signal-level-limiting feature invoked when the siren-cancelling headset overloaded. The digital active-noise-control technology in the siren-cancelling headset offers potential for providing selective-frequency hearing protection against certain tonal noise hazards, with concomitant benefits to communications and user comfort of a lightweight, supra-aural headphone. ( 27 Refs)

**Subfile:** A**Descriptors:** acoustic noise; acoustic signal processing; noise abatement; radiation protection**Identifiers:** narrow-band digital active noise reduction; siren-cancelling headset; acoustical manikin insertion loss; active noise cancellation; hearing protectors; communications headsets; low-frequency passive attenuation; wideband low-frequency biased noises; KEMAR manikin; digital active-noise-control technology; selective-frequency hearing protection; tonal noise hazards**Class Codes:** A4350 (Noise, its effects and control); A4360 (Acoustic signal processing ); A8760P (Radiation protection)

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8/9/4 (Item 4 from file: 2)

05692868 **INSPEC Abstract Number:** A9415-4350-003, C9408-3120Z-001**Title:** Near field zones of quiet**Author** Joseph, P.; Elliott, S.J.; Nelson, P.A.**Author Affiliation:** Inst. of Sound & Vibration Res., Southampton Univ., UK**Journal:** Journal of Sound and Vibration vol.172, no.5 p. 605-27**Publication Date:** 19 May 1994 **Country of Publication:** UK

**CODEN:** JSVIAG **ISSN:** 0022-460X**U.S. Copyright Clearance Center Code:** 0022-460X/94/200605+23\$08.00/0**Language:** English **Document Type:** Journal Paper (JP)**Treatment:** Theoretical (T); Experimental (X)

**Abstract:** This paper examines the consequences of driving a single secondary loudspeaker to cancel the pressure due to some primary source at a point in its near field. This simple technique has been applied to the sound field in a highly reverberant room to produce zones of quiet in the vicinity of the loudspeaker, which have diameters that are typically equal to one-tenth of the acoustic wavelength, within which the sound pressure level is attenuated by at least 10 dB. The principal advantage gained with this strategy over other active techniques for controlling the sound field in rooms is that the sound pressure level well away from the control point is largely unaffected, an increase of only a small fraction of one dB being typical. Such a loudspeaker-microphone configuration could be located, for example, in the head rests of cars or aeroplanes, or indeed anywhere where the listener is seated for significant lengths of time and subjected to high ambient noise levels such that auditory comfort may be disturbed. Measurements are presented of the near field quiet zone in a reverberant room at frequencies well above the Schroeder frequency. These experimental findings, which represent a space averaged result over source position, indicate good agreement with the simple theory developed in this paper. It is demonstrated theoretically that the diameter of the quiet zone formed at any arbitrary point and direction in the near field of the loudspeaker is numerically proportional to the specific acoustic impedance at that point and direction. In general terms, the 10 dB quiet zone is observed to increase as the diameter of the secondary loudspeaker increases and the microphone is moved increasingly further from the loudspeaker. Close to the loudspeaker the pressure due to the secondary source is predominantly governed by the directly radiated near field and so the quiet zone formed in this region is therefore insensitive to the nature of the primary sound field. This important feature makes it highly suitable for producing reductions in the sound pressure level within enclosed spaces at frequencies where the modal density is high such that global control strategies are rendered ineffective. ( 27 Refs)

**Subfile:** A C

**Descriptors:** acoustic field; acoustic impedance; acoustic signal processing; architectural acoustics; filtering and prediction theory; noise abatement; reverberation

**Identifiers:** single secondary loudspeaker; primary source; near field; sound field; highly reverberant room; zones of quiet; active techniques; loudspeaker-microphone configuration; cars; aeroplanes; near field quiet zone; Schroeder frequency; acoustic impedance; global control strategies; active noise control

**Class Codes:** A4350 (Noise, its effects and control); A4355 (Architectural acoustics); A4360 (Acoustic signal processing); C3120Z (Other nonelectric variables); C1260 (Information theory); C3395 (Other applications of control)

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8/9/5 (Item 5 from file: 2)

03224827 **INSPEC Abstract Number:** B84021953**Title:** Some factors affecting the performance of airline entertainment headsets**Author** Gilman, S.**Author Affiliation:** Univ. of California Los Angeles, School of Medicine, Audiology Res. Lab., Los Angeles, CA, USA**Journal:** Journal of the Audio Engineering Society vol.31, no.12 p. 914-20

**Publication Date:** Dec. 1983 **Country of Publication:** USA  
**CODEN:** ADIOA3 **ISSN:** 0004-7554

**Language:** English **Document Type:** Journal Paper (JP)

**Treatment:** Practical (P); Experimental (X)

**Abstract:** Results of tests of several airline entertainment system headsets on a manikin have shown response features for the headset and insert earpieces (tips) that can substantially affect both a passenger's comfort and the perception of the sound quality. In addition, the ability of the tips to attenuate cabin noise can influence both the intelligibility of speech on sound tracks and the extent to which the sound pressure level necessary for an acceptable signal-to-noise ratio may exceed a safe upper limit. Effects of design differences are described and suggestions are made for improving performance and listener acceptance. ( 12 Refs)

**Subfile:** B

**Descriptors:** headphones; sound reproduction

**Identifiers:** airline entertainment headsets; response features; insert earpieces; sound quality; cabin noise; sound pressure level; signal-to-noise ratio

**Class Codes:** B6450D (Audio recording media and techniques)

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8/9/6 (Item 6 from file: 2)

0000462093 **INSPEC Abstract Number:** 1957A04091

**Title:** Speech communications in noise: Some equipment problems

**Author** Hawley, M.E.

**Journal:** Journal of the Acoustical Society of America 28 6 p. 1256-1260

**Publication Date:** Nov. 1956 **Country of Publication:** USA

**Language:** English **Document Type:** Journal Paper (JP)

**Abstract:** The design of a speech communication system begins with an operations analysis of the communication problem. When speech has been chosen as the means and when the needed linkages have been determined, the designer chooses the best compromises among the frequently conflicting factors of intelligibility, safety, comfort, quality, reliability and economy. It is particularly important to provide good quality as well as adequate intelligibility. The latter may be predicted with reasonable accuracy if the noise and signal levels and the transfer characteristics throughout the system are known. Pressure gradient microphones, especially with noise shields, noise attenuating earcaps, and earplugs, are the primary acoustical devices that can be used to obtain high intelligibility through improvement of signal-to-noise ratios. If the listeners are in intense noise, headsets presently pose the major systems limitation. Automatic volume control and peak clipping are the audio techniques most frequently used to complement the transducers. Typical values and limitations for these kinds of processing are given. Optimum results can be obtained only if the whole system is designed together.

**Subfile:** A

**Descriptors:** speech

**Identifiers:** speech

**Class Codes:** A8736 (Speech and biocommunications); A4370 (Speech communication); A8734 (Audition)

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8/9/7 (Item 1 from file: 6) 1513960    **NTIS Accession Number:** PB90-229741

**Improved Hearing Protection in a Mining Environment**

( Final rept )

Best, C. F. ; Coleman, G. J. ; Graveling, R. A. ; Simpson, G. C. ; Talbot, C. F.

Institute of Occupational Medicine, Edinburgh (Scotland).

**Corporate Source Codes:** 076778000

**Report Number:** TM/89/09

Jun 89 73p

**Language:** English

**Journal Announcement:** GRAI9017

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**NTIS Prices:** PC E07/MF E07

**Country of Publication:** United Kingdom

Conventional hearing protectors, while adequate for basic hearing conservation in mine operations are less than ideal in terms of related requirements such as signal audibility and comfort/acceptability. A design specification for a hearing protector ideally suited to mineworkers requirements was produced from general guidelines developed in a previous project and initial studies in this project covering comfort and acceptability. The crucial element in the design specification, which is not achieved in any conventional protector was a flat frequency response within the range 15dB-18dB attenuation. Three methods of achieving the required attenuation performance were investigated: passive non-linear, electronic non-linear and active noise reduction. An existing, commercially available, passive non-linear hearing protector was found to have an attenuation profile close to that required and was selected as the passive option. An electronic non-linear hearing protector which had been developed under a previous ECSC project was selected, with modification to the attenuation profile, as the second option.

**Descriptors:** \*Coal mining; \*Ear protectors; Auditory defects; Safety engineering; Ear; Attenuation; Noise reduction; Attenuators; Protective clothing; Noise(Sound); Frequencies

**Identifiers:** \*Foreign technology; \*Health hazards; NTISDFMBR

**Section Headings:** 48A (Natural Resources and Earth Sciences--Mineral Industries); 95G (Biomedical Technology and Human Factors Engineering--Protective Equipment) ; 57U (Medicine and Biology--Public Health and Industrial Medicine)

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8/9/8 (Item 1 from file: 8)

09820852    **E.I. No:** EIP04178133343

**Title:** Hearing protection devices: Issues on selection

**Author:** Arezes, P.M.; Miguel, A.S.R.

**Corporate Source:** Dept. of Production Campus de Azurem University of Minho, P - 4800 Guimaraes, Portugal

**Conference Title:** Proceedings of the XIVth Triennial Congress of the International Ergonomics Association and 44th Annual Meeting of the Human Factors and Ergonomics Association, 'Ergonomics for the New Millennium'

**Conference Location:** San Diego, CA, United States    **Conference Date:** 20000729-20000804

**E.I. Conference No.:** 62639

**Source:** Proceedings of the XIVth Triennial Congress of the International Ergonomics Association and 44th Annual Meeting of the Human Factors and Ergonomics Association, 'Ergonomics for the New Millennium' 2000.

**Publication Year:** 2000

**Language:** English

**Document Type:** CA; (Conference Article) **Treatment:** T; (Theoretical)

**Journal Announcement:** 0405W1

**Abstract:** Although hearing protection devices (HPD) should be used as a temporary solution, their selection shouldn't be neglected. Some ergonomics features associated with this kind of protective device must be taken into account. The present study aims at analyzing the relationship between the efficiency and the ergonomics aspects related to the comfort afforded by a personal hearing protector when used in industrial noisy environments. Results obtained seem to demonstrate that there are significant differences between catalogued and effective attenuation. Finally, we must emphasize that the former goal can only be achieved through the attainment of an adequate balance between the range of parameters likely to determine HPD usage. Moreover, it is important to consider the role played by the workers, namely their attitude towards the use of hearing protection, which will ultimately determine the overall success of any hearing conservation program. 9 Refs.

**Descriptors:** \*Hearing aids; Ergonomics; Audition; Acoustic noise; Attenuation; Noise abatement; Signal detection; Education; Data acquisition; Microphones; Correlation methods

**Identifiers:** Hearing protection devices (HPD); Comfort indices (CI)

**Classification Codes:**

461.5 (Human Rehabilitation Engineering); 752.1 (Acoustic Devices); 461.4 (Human Engineering); 941.1 (Acoustical Instruments); 751.4 (Acoustic Noise); 751.1 (Acoustic Waves); 716.1 (Information & Communication Theory); 901.2 (Education); 723.2 (Data Processing); 922.2 (Mathematical Statistics)

461 (Bioengineering); 752 (Sound Devices, Equipment & Systems); 941 (Acoustical & Optical Measuring Instruments); 751 (Acoustics, Noise & Sound); 716 (Electronic Equipment, Radar, Radio & Television); 901 (Engineering Profession); 723 (Computer Software, Data Handling & Applications); 922 (Statistical Methods)

46 (BIOENGINEERING); 75 (SOUND & ACOUSTICAL TECHNOLOGY); 94 (INSTRUMENTS & MEASUREMENT); 71 (ELECTRONICS & COMMUNICATION ENGINEERING); 90 (ENGINEERING, GENERAL); 72 (COMPUTERS & DATA PROCESSING); 92 (ENGINEERING MATHEMATICS)

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8/9/9 (Item 2 from file: 8)

08430036 E.I. No: EIP99114927395

**Title:** Attenuation correction for PET using count-limited transmission images reconstructed with median root prior

**Author:** Alenius, S.; Ruotsalainen, U.; Astola, J.

**Corporate Source:** Tampere Univ of Technology, Tampere, Finl

**Conference Title:** Proceedings of the 1998 Medical Imaging Conference (MIC)

**Conference Location:** Toronto, Ont, Can **Conference Date:** 19981112-19981114

**E.I. Conference No.:** 55638

**Source:** IEEE Transactions on Nuclear Science v 46 n 3 II 1999. p 646-651

**Publication Year:** 1999

**CODEN:** IETNAE **ISSN:** 0018-9499

**Language:** English

**Document Type:** JA; (Journal Article) **Treatment:** A; (Applications); T; (Theoretical)

**Journal Announcement:** 0001W3

**Abstract:** Quantitative PET studies require the computation of the attenuation correction factors (ACF) for compensating the body attenuation effect in the emission data. Short acquisition times for transmission are desired, because of patient comfort and movement elimination. In practice, long acquisition times are used due to the statistical noise of count-limited scans. In order to reduce the noise, the median root prior (MRP) iterative reconstruction method was used for reconstruction of short acquisition time transmission images. Using these images, the ACFs were generated for correction of emission data. The new approach allows for scan times of 2 min or less, which is desirable for quantitative whole body PET studies. The new method is object independent and robust, because no smoothing of scan data or segmentation of the image are used. (Author abstract) 17 Refs.

**Descriptors:** \*Positron emission tomography; Image reconstruction; Image enhancement; Attenuation; Computational methods; Motion compensation; Spurious signal noise; Iterative methods; Image segmentation; Algorithms

**Identifiers:** Attenuation correction; Count limited transmission images; Median root prior; Iterative reconstruction method; Maximum likelihood expectation maximization

**Classification Codes:**

461.1 (Biomedical Engineering); 741.1 (Light/Optics); 921.6 (Numerical Methods); 701.1 (Electricity: Basic Concepts & Phenomena)

461 (Biotechnology); 741 (Optics & Optical Devices); 921 (Applied Mathematics); 701 (Electricity & Magnetism)

46 (BIOENGINEERING); 74 (OPTICAL TECHNOLOGY); 92 (ENGINEERING MATHEMATICS); 70 (ELECTRICAL ENGINEERING)

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8/9/10 (Item 3 from file: 8)

07241842 E.I. No: EIP95092843592

**Title:** Hybrid attenuation correction technique to compensate for lung density in 3D total body PET

**Author:** Tai, Y.-C.; Lin, K.-P.; Dahlbom, M.; Huang, S.-C.; Hoffman, E.J.

**Corporate Source:** UCLA Sch of Medicine, Los Angeles, CA, USA

**Conference Title:** Proceedings of the 1994 Nuclear Science Symposium and Medical Imaging Conference. Part 4 (of 4)

**Conference Location:** Norfolk, VA, USA **Conference Date:** 19941030-19941105

**E.I. Conference No.:** 43495

**Source:** IEEE Nuclear Science Symposium & Medical Imaging Conference v 4 1995. IEEE, Piscataway, NJ, USA, 94CH35762. p 1643-1647

**Publication Year:** 1995

**CODEN:** 85OQAD

**Language:** English

**Document Type:** CA; (Conference Article) **Treatment:** A; (Applications); T; (Theoretical)

**Journal Announcement:** 9510W5

**Abstract:** A hybrid attenuation correction technique (ACT) has been developed for <sup>18</sup>F-FDG Total Body Positron Emission Tomography (PET). With a short transmission scan of the thorax, any

time within a few days of the isotope injection, it can correct for attenuation in the entire body. Segmentation, registration, and active contour finding techniques are applied to both emission and short transmission images to locate and map the major attenuating structures in the body. This technique eliminates the need for patient to remain still from the start of the transmission scan to the end of the emission scan without the added noise of simultaneous or post transmission scan measurements. The results of volunteer studies are comparable to standard measured ACT, both visually and quantitatively. Efficient use of scanner and maximum comfort for patients make it a highly desirable technique for clinical imaging. (Author abstract) 11 Refs.

**Descriptors:** \*Positron emission tomography; Image processing; Three dimensional; Tissue; Image segmentation; Scanning; Spurious signal noise; Medical imaging; Fuzzy sets; Algorithms

**Identifiers:** Hybrid attenuation correction technique; Pixels; Thorax; Isotope injection; Attenuation correction factors; Thresholding; Fuzzy thresholding algorithms ; Image volume

**Classification Codes:**

461.1 (Biomedical Engineering); 723.2 (Data Processing); 461.2 (Biological Materials); 716.1 (Information & Communication Theory); 921.4 (Combinatorial Mathematics, Includes Graph Theory, Set Theory)

461 (Biotechnology); 723 (Computer Software); 716 (Radar, Radio & TV Electronic Equipment); 921 (Applied Mathematics)

46 (BIOENGINEERING); 72 (COMPUTERS & DATA PROCESSING); 71 (ELECTRONICS & COMMUNICATIONS); 92 (ENGINEERING MATHEMATICS)

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8/9/11 (Item 4 from file: 8)

06917070 E.I. No: EIP94081360491

**Title:** Narrow-band digital active noise reduction in a siren-cancelling headset: Real-ear and acoustical manikin insertion loss

**Author:** Casali, John G.; Robinson, Gary S.

**Corporate Source:** Virginia Polytechnic Inst and State Univ, Blacksburg, VA, USA

**Source:** Noise Control Engineering Journal v 42 n 3 May-Jun 1994. p 101-115

**Publication Year:** 1994

**CODEN:** NCEJD5 **ISSN:** 0736-2501

**Language:** English

**Document Type:** JA; (Journal Article) **Treatment:** A; (Applications); X; (Experimental)

**Journal Announcement:** 9409W5

**Abstract:** Active noise cancellation (ANC) technology has become available for hearing protectors and communications headsets in efforts to augment their low-frequency passive attenuation performance. Several analog-electronics ANC earmuffs offer active attenuation of up to about 20 dB at frequencies less than 1000 Hz and rely on the muff's passive attenuation at higher frequencies. Such performance lends itself primarily to application in wideband, low-frequency biased noises. However, operators in more narrow-band noise threats may also benefit from a new approach to ANC-based hearing protection devices, i.e., that of the digital, supra-aural headphone. The design, testing, and application of digital ANC-based protectors (as contrasted with analog) are reviewed, and results of an attenuation experiment on a siren-cancelling headphone are presented. The insertion loss measurement scenario utilized one-third-octave, 30-s-average sound pressure levels measured by miniature microphones in real ears and on a KEMAR manikin. Temporally variant siren modes consisting of 'wail,' 'yelp,' and 'hi-lo,' were reproduced at representative wideband 30-s-average sound pressure levels of 90, 95, and

100 dB. There was generally close agreement between the real-ear and KEMAR insertion-loss data at midband frequencies from 500 to 6300 Hz. At the peak siren frequency of 800 Hz, mean real-ear attenuation ranged from 8 to 22 dB. At 4000 Hz and some higher frequencies, attenuations of 15 dB were found, but at the 100 dB levels for the Wail and Yelp signals, significant reductions in attenuation (from those measured at the lower siren levels) occurred as a consequence of a pre-programmed signal-level-limiting feature invoked when the siren-cancelling headset overloaded. The digital active-noise-control technology in the siren-cancelling headset offers potential for providing selective-frequency hearing protection against certain tonal noise hazards, with concomitant benefits to communications and user comfort of a lightweight, supra-aural headphone. (Author abstract) 27 Refs.

**Descriptors:** \*Noise abatement; Digital filters; Active filters; Sirens; Headphones; Ear protectors; Linear control systems; Acoustic variables control; Acoustic signal processing; Attenuation

**Identifiers:** Siren cancelling headset; Narrow band digital active noise reduction; Acoustical manikin KEMAR; Insertion loss; Sound pressure; Supra aural headphones

**Classification Codes:**

751.4 (Acoustic Noise); 703.2 (Electric Filters); 752.4 (Acoustic Generators); 752.1 (Acoustic Devices); 731.2 (Control System Applications); 731.3 (Specific Variables Control)

751 (Acoustics); 703 (Electric Circuits); 752 (Sound Equipment & Systems); 731 (Automatic Control Principles)

75 (ACOUSTICAL TECHNOLOGY); 70 (ELECTRICAL ENGINEERING); 73 (CONTROL ENGINEERING)

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8/9/12 (Item 5 from file: 8)

04517849 E.I. Monthly No: EI8405043371 E.I. Yearly No: EI84057493

**Title:** SOME FACTORS AFFECTING THE PERFORMANCE OF AIRLINE ENTERTAINMENT HEADSETS.

**Author:** Gilman, Samuel

**Corporate Source:** Univ of California, Sch of Medicine, Audiology Research Lab, Los Angeles, Calif, USA

**Source:** Journal of the Audio Engineering Society v 31 n 12 Dec 1983 p 914-920

**Publication Year:** 1983

**CODEN:** ADIOA3 **ISSN:** 0004-7554

**Language:** ENGLISH

**Journal Announcement:** 8405

**Abstract:** Results of tests of several airline entertainment system headsets on a manikin have shown response features for the headset and insert earpieces (tips) that can substantially affect both a passenger's comfort and the perception of the sound quality. In addition, the ability of the tips to attenuate cabin noise can influence both the intelligibility of speech on sound tracks and the extent to which the sound pressure level necessary for an acceptable signal-to-noise ratio may exceed a safe upper limit. Effects of design differences are described and suggestions are made for improving performance and listener acceptance. 12 refs.

**Descriptors:** \*HEADPHONES; AIRCRAFT--Auxiliary Equipment; SOUND REPRODUCTION

**Identifiers:** AIRLINE ENTERTAINMENT HEADSETS

**Classification Codes:**

752 (Sound Equipment & Systems); 652 (Aircraft)

75 (ACOUSTICAL TECHNOLOGY); 65 (AEROSPACE ENGINEERING)

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8/9/13 (Item 6 from file: 8)

03833356 E.I. Monthly No: EI7907054381 E.I. Yearly No: EI79059281

**Title: EVALUATION OF AN ACTIVE NOISE REDUCTION SYSTEM FOR USE WITH EAR DEFENDERS.**

**Author:** Dorey, A. P.; Pelc, S. F.; Rawlinson, R. D.; Wheeler, P. D.

**Corporate Source:** Southampton Univ, Engl

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**Abstract:** In a high noise environment, conventional ear defenders are incapable of providing sufficient noise attenuation at low frequencies (below APPROX EQUALS 1 kHz). An active reduction system has been developed in which the acoustic noise field inside the ear defenders is detected using a miniature microphone and an antiphase signal is fed back to the communications telephone within the ear defender. The feedback loop also affects the communications signal which has to be compensated outside the loop. The use of active noise reduction in a laboratory trial simulating flight conditions has been shown to give encouraging objective and subjective results. The additional subjective comfort was noted by many subjects.

**Descriptors:** \*NOISE ABATEMENT

**Classification Codes:**

751 (Acoustics)

75 (ACOUSTICAL TECHNOLOGY)

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**NARROW-BAND DIGITAL ACTIVE NOISE-REDUCTION IN A SIREN-CANCELING HEADSET - REAL-EAR AND ACOUSTICAL MANNEQUIN INSERTION LOSS**

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**Language:** ENGLISH **Document Type:** ARTICLE

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**Journal Subject Category:** ENGINEERING; ACOUSTICS

**Abstract:** Active noise cancellation (ANC) technology has become available for hearing protectors and communications headsets in efforts to augment their low-frequency passive attenuation performance. Several analog-electronics ANC earmuffs offer active attenuation of up to about 20 dB at frequencies less than 1000 Hz and rely on the muff's passive attenuation at higher frequencies. Such performance lends itself primarily to application in wideband, low-frequency biased noises. However, operators in more narrow-band noise threats may also benefit from a new approach to ANC-based hearing protection devices, i.e., that of the digital, supra-aural headphone. The design, testing, and application of digital ANC-based protectors (as contrasted with analog) are reviewed, and results of an attenuation experiment on a siren-cancelling headphone are presented. The insertion loss measurement scenario utilized one-third-octave, 30-s-average sound pressure levels measured by miniature microphones in real ears and on a KEMAR manikin. Temporally variant siren modes consisting of "wail," "yelp," and "hi-lo," were reproduced at representative wideband 30-s-average sound pressure levels of 90, 95, and 100 dB. There was generally close agreement between the real-ear and KEMAR insertion-loss data at midband frequencies from 500 to 6300 Hz. At the peak siren frequency of 800 Hz, mean real-ear attenuation ranged from 8 to 22 dB. At 4000 Hz and some higher frequencies, attenuations of 15 dB were found, but at the 100 dB levels for the Wail and Yelp signals, significant reductions in attenuation (from those measured at the lower siren levels) occurred as a consequence of a pre-programmed signal-level-limiting feature invoked when the siren-cancelling headset overloaded. The digital active-noise-control technology in the siren-cancelling headset offers potential for providing selective-frequency hearing protection against certain tonal noise hazards, with concomitant benefits to communications and user comfort of a lightweight, supra-aural headphone.

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